
ROADLESS AREAS

Abstract: There are 38 roadless areas (RAs) on the ARNF, totaling 330,230¹ acres. These large unroaded tracts provide the Forest with opportunities to manage for: (a) potential wilderness areas; (b) nonmotorized and limited motorized (trails) recreation opportunities outside wilderness; (c) effective wildlife habitat; or (d) other resource emphasis, including commodity uses.

Management area prescription allocations vary by alternative for the roadless areas. In Alternatives A, C, E, and I some areas are allocated to prescriptions where timber harvest, oil and gas leasing, and motorized recreation are allowed. No areas are recommended for wilderness. Alternative B recommends 8,551² acres for wilderness designation, and other areas would see little change in the unroaded character, since many areas are allocated to prescriptions that do not allow for commodity production or motorized activities. Alternative H would see no change in the unroaded character of 226,154 acres of the roadless areas. Its recommendation of 259,363 acres for wilderness designation includes 33,209 acres not in the analyzed roadless areas.

One of the *Forest Plan* Revision Topics recognizes the importance of roadless area management. The ultimate recommendation and/or designation of roadless areas as wilderness also has implications related to Revision Topics for biodiversity, recreation, timber and travel management.

INTRODUCTION

The *Forest Plan* revision evaluated 330,230 acres in 38 roadless areas for possible recommendation for wilderness designation by Congress. The Wilderness Acts of 1964 and 1978, and the Colorado Wilderness Acts of 1980 and 1993 have designated 295,573 acres (23 percent) of the Forests as part of the National Wilderness Preservation System.

Future management of roadless areas is a controversial and polarized issue. Some advocate that enough wilderness has been designated and that multiple use management is appropriate in these areas. Some believe that the backcountry, undeveloped ecosystem, or Research Natural Area management prescriptions are sufficient protection from development. Others desire the

¹ All acreages were computed using the Forest's GIS. While this system is very accurate, totals are rounded; consequently some columns in summary tables will not "add up" correctly. We do not believe the discrepancies are significant.

² Other sections of the *FEIS* and *Forest Plan* show 8,810 acres recommended in Alternative B. This discrepancy is due to two computer processes being used for the roadless area analysis and the overall Forest analysis.

permanent future protection that only wilderness designation would provide. Public comments on issues and concerns include:

- The environment should remain in a natural and undisturbed state to maintain biodiversity and promote ecosystem management.
- Fully protect all roadless areas. They are needed to halt the diminution of biological diversity, and for wildlife, watershed, dispersed recreation, and use by future generations.
- We need more wilderness, and should add to these areas whenever possible.
- Use a regional prescription, or develop one specifically for use on the Forest to protect roadless areas. Severely restrict all commodity production on these areas - no timber harvest or roads. Assign areas to this prescription unless the FS can show there will be a net gain to the ecosystem by entering them.
- Wilderness recommendations eliminate uses such as timber harvests, mineral development, and motorized access.
- Roadless areas have already been designated as unacceptable as wilderness. They should be managed for multiple use.
- The needs for driving facilities and access are increasing due to the aging population. There is enough wilderness since only 2 percent of the recreation occurs in wilderness.
- We do not need more wilderness and natural growth areas because they become full of old and diseased timber, which increases the fire danger.
- James Peak and other areas should be designated wilderness.
- James Peak and other areas should not be wilderness.

LEGAL FRAMEWORK

In January, 1979, the Forest Service issued a national *Final Environmental Impact Statement and Record of Decision* that documented the review of 62 million acres of roadless areas within the total 188 million acres in the National Forest System as part of the second Roadless Area Review and Evaluation (RARE II). The purpose of RARE II was to determine which areas were suitable for wilderness and which should be used for other purposes.

In 1983, the regulations for the *National Forest Management Act of 1976 (NFMA)* were revised, and now require that roadless and undeveloped areas be identified, inventoried, and evaluated for wilderness designation by Congress as a part of the forest plan revision process.

Regulations for the *Forest and Rangeland Renewable Resources Planning Act of 1974* are stated at 36 CFR 219.17: “(a) Unless otherwise provided by law, roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential wilderness areas during the Forest Planning process...” Recommendations for potential wilderness are made using criteria provided by the *Wilderness Act of 1964*. The Act established the National Wilderness Preservation System, defined wilderness, and provided for activities that may occur within designated wilderness areas.

The Forest has evaluated the 38 roadless areas based on existing laws, regulations, and direction, and interpreted their application to the various RAs. Some groups agree with Forest Service determinations, while others may find the interpretation of human use, opportunities for primitive unconfined recreation, the natural environment and other factors to be more restrictive than they would like. Areas the Forest Service does not recommend for wilderness designation because of these and other management concerns may nevertheless be recommended for wilderness by various public or special interest groups.

The Forest Service can only make recommendations to Congress, and only Congress can designate wilderness through the legislative process. Recommendations and designations are often controversial, and actual designations may take several years or fail ever to pass Congress. Congress may create boundaries based on Forest Service recommendations, public comments, political issues, or other factors. The boundaries or areas designated as wilderness may or may not resemble the Forest Service recommendations. Publics advocating additional or no additional wilderness have the opportunity to voice their issues with Congress, outside of the Forest Service evaluation process.

While a management allocation may allow activities such as timber sales in a roadless area, it does not require it. Such activities may be proposed, but the appropriate NEPA process, probably the EIS, must evaluate the potential change in the roadless character of the area.

ROADLESS AREA EVALUATION PROCESS

On the ARNF, RARE II assessments were used to initially identify roadless areas for further evaluation. Additional areas of 5,000 acres or more, and areas adjacent to existing wildernesses greater than 20 acres were also evaluated. Areas were dropped or boundaries were adjusted if they included:

1. roads that are currently designated as Forest Development Roads that the Forest wanted to keep on the transportation system, including two-tracks and four-wheel

drive routes. Evident "ways" or "social" roads not on the Forest system and not maintained were not considered

2. timber harvests that were still evident and have not regained a natural appearance
3. significant encumbrances, such as existing special uses with substantial development
4. reservoirs
5. manageability problems with the shape of the area. For example, some parcels in the intermix areas of private and federal ownership were larger than 5,000 acres, but the shape was unmanageable.

Evaluation of each roadless area was based on the area's capability, suitability, availability and manageability characteristics, and the need for additions to the National Wilderness Preservation system. The evaluation helped determine whether these areas should be recommended for wilderness or were better suited for allocation to other management emphasis. Appendix C contains descriptions of the areas and the analysis process.

Roadless areas recommended for wilderness will be managed to protect their wilderness characteristics until Congress makes a decision on designation, or the *Forest Plan* is revised in the future. Refer to the *Forest Plan*, Chapter Three, Management Area 1.2, Recommended for Wilderness, for the management area direction.

A "roadless area" (RA) is any unroaded area that was analyzed. An "inventoried roadless area" (IRA) is an area determined by the Forest to be capable of designation using the criteria in the Wilderness Act and in agency direction. Areas not found to be capable became "undeveloped areas."

AFFECTED ENVIRONMENT

The 330,230 acres evaluated represent 34 percent of the nonwilderness Forests and 26 percent of the entire Forests. Areas considered are shown in Figure 3.23 and Table 3.117. Acreage adjustments were made in several roadless areas from the draft EIS, primarily due to updated travel route, hydrologic (i.e., constructed ditches), and other inventories.

No area on the Grassland was found to be capable of meeting the criteria for the analysis and designation in the Wilderness Act due to several factors. Roads and two-track routes exist throughout the Grassland, and Weld County holds a public road right-of-way on all section lines. Thirty percent of the Grassland (58,122 acres) has private mineral estates with high potential for oil and gas deposits. Surface occupancy for mineral development cannot be prohibited by the Forest Service on private mineral estates.

Figure 3.23

Arapaho and Roosevelt National Forests Roadless Areas

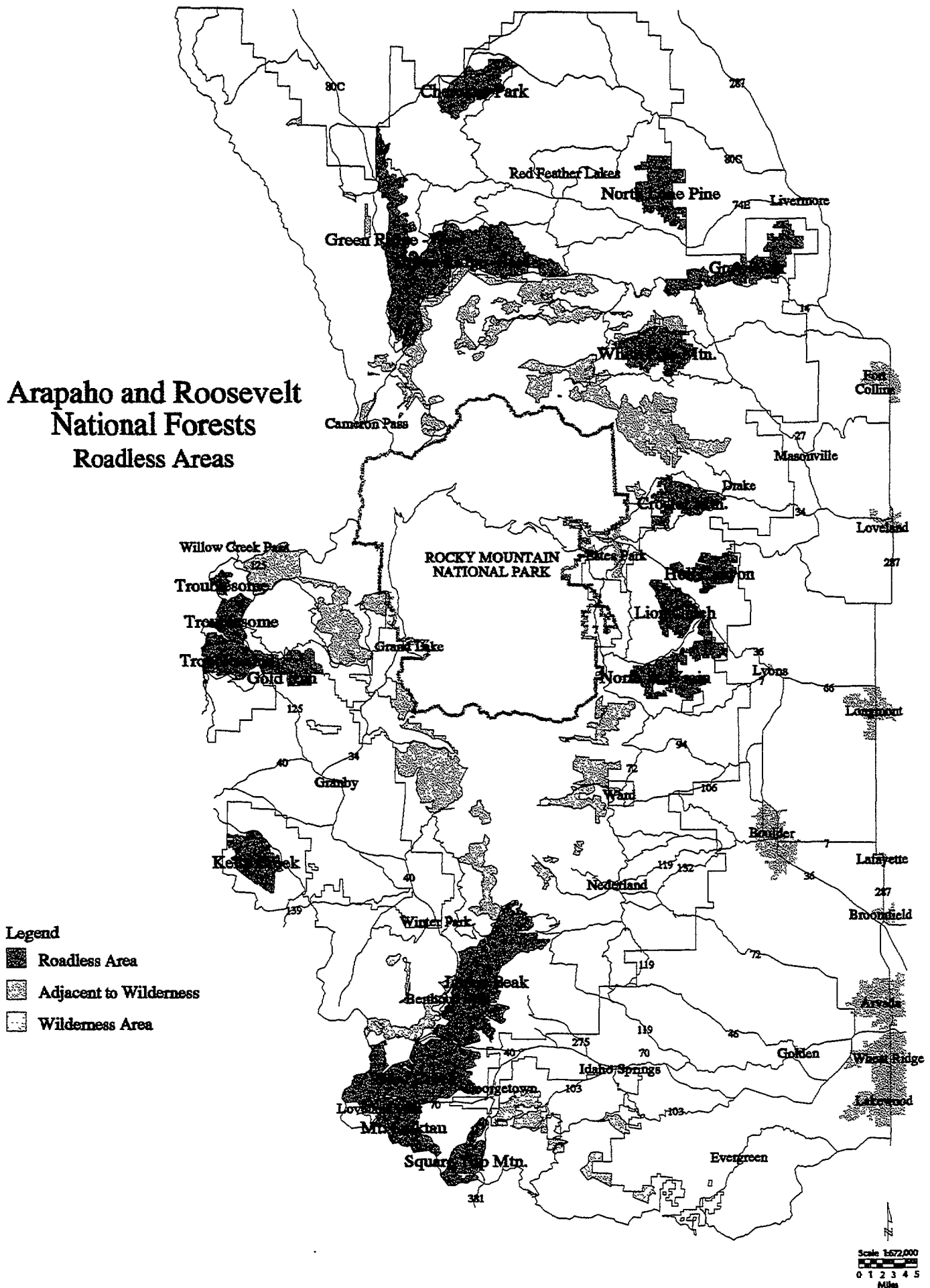


Table 3.117 Roadless Areas Evaluated in the Revision

Areas Adjacent to Existing Wildernesses	
Area Name	Total NFS Acres
Cache la Poudre Adjacent Area (1 unit)	3,194
Comanche Peak Adjacent Area (8 units)	44,722
Indian Peaks Adjacent Area (4 units)	34,700
Mount Evans Adjacent Area (4 units)	10,280
Neota Adjacent Area (1 unit)	2,169
Never Summer Adjacent Area (1 unit)	20,082
Rawah Adjacent Area (1 unit)	2,779
Vasquez Adjacent Area (1 unit)	6,132
Subtotal	124,058
Areas Independent of Existing Wildernesses	
Area Name	Total NFS Acres
Bard Creek	25,382
Cherokee Park	7,787
Crosier Mountain	7,204
Gold Run	6,596
Green Ridge East	26,692
Green Ridge West	13,639
Grey Rock	12,150
Hell Canyon	5,924
James Peak	26,044
Kelly Creek	8,193
Lion Gulch	6,575
Mount Sniktau	8,316
North Lone Pine	9,469
North Saint Vrain	11,718
Square Top Mountain	6,443
Troublesome	13,832
White Pine Mountain	10,208
Subtotal	206,172
Total for both categories	330,230

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

Of the 330,230 acres evaluated, Alternative B recommends 8,551 acres for wilderness designation, and Alternative H recommends 259,363 acres, forestwide, including 226,154 acres in roadless areas analyzed in this section. Alternatives A, C, E, and I recommend no additional areas for wilderness designation.

The environmental consequences of roadless area recommendations are described by first listing the specific areas recommended for wilderness in Alternatives B and H. Then the proposed management area allocations for all roadless areas are summarized by alternative. The effects of these allocations on biodiversity and habitat effectiveness, recreation opportunities, and commodity uses are described and summarized in relation to factors considered in the Need Assessment for Additional Designations as Wilderness. Recreation use trends and the proximity of other wildernesses are also discussed. Finally, cumulative effects are considered through reference to other sections in Chapter Three of this *FEIS*.

FEIS Appendix C provides summary table descriptions of the capability and evaluation determinations, and the management area allocations for each area. The detailed narratives are part of the planning record. Individual narratives can be requested by interested readers.

The acreages for all roadless area parcels analyzed and those areas recommended for designation in Alternatives B and H are shown in Table 3.118. The *management area allocation map* included with the *Forest Plan* shows locations of the recommended areas. Alternative H recommended an additional 33,209 acres of the Forests not included in the RAs analyzed, for a total of 259,363 acres. Alternative B analyzed only roadless areas and recommended 8,551 acres for wilderness designation.

Four areas are adjacent to existing and possible roadless areas on other National Forests bordering the ARNF. The 13,832 acre Troublesome area on the Sulphur District is adjacent to a 46,884 acre roadless area on the Routt National Forest. No definite topographic feature such as a river or prominent ridge separates the areas on the two Forests. After evaluating the respective roadless areas, neither of the Forests has recommended the Troublesome area for wilderness designation.

The Bard Creek (25,382 acres), Mount Sniktau (8,316 acres), and Square Top Mountain (6,443 acres) roadless areas are adjacent to potential areas on the White River and Pike-San Isabel National Forests. These Forests have not identified roadless areas in their revision process at this time. The ARNF management area allocations retain more than 5,000 acres in each RA, with management emphasis on maintaining the roadless character of the areas. If the White River and Pike-San Isabel Forests determine that the adjacent areas should be recommended for wilderness

designation, the ARNF *Forest Plan* could be amended through the appropriate NEPA analysis to recommend these areas for wilderness designation.

Table 3.118 Roadless Area Recommendations for Wilderness Designations in Alternatives B and H

Area Name	Roadless Areas Total Acres Analyzed	Acres Recommended by Alternative	
		B	H
ADJACENT AREAS			
Cache la Poudre	3,194	0	0
Comanche Peak			
Unit A	2,909	0	2,761
Unit B	3,524	0	93
Unit C	5,272	0	4,475
Unit D	5,218	1,112	4,660
Unit E	2,848	0	2,791
Unit F	8,708	670	7,140
Unit G	15,616	3,359	11,716
Unit H	627	0	0
Indian Peaks			
Unit A	1,085	963	838
Unit B	21,968	2,030	20,954
Unit C	10,804	0	10,167
Unit D	843	0	405
Mount Evans			
Unit A	5,740	417	5,100
Unit B	716	0	422
Unit C	1,037	0	849
Unit D	2,787	0	1,789
Neota	2,169	0	2,005
Never Summer	20,082	0	6,330
Rawah	2,779	0	2,624
Vasquez	6,132	0	5,506
Subtotal	124,058	8,551	90,625

Area Name	Roadless Areas Total Acres Analyzed	Acres Recommended by Alternative	
		B	H
INDEPENDENT AREAS			
Bard Creek	25,382	0	20,624
Cherokee Park	7,787	0	0
Crosier Mountain	7,204	0	0
Gold Run	6,596	0	5,954
Green Ridge East	26,692	0	22,548
Green Ridge West	13,639	0	0
Grey Rock	12,150	0	0
Hell Canyon	5,924	0	0
James Peak	26,044	0	23,197
Kelly Creek	8,193	0	7,949
Lion Gulch	6,575	0	0
Mount Sniktau	8,316	0	6,340
North Lone Pine	9,469	0	9,442
North St. Vrain	11,718	0	11,312
Square Top Mtn	6,443	0	5,929
Troublesome	13,832	0	12,128
White Pine	10,208	0	10,105
Subtotal	206,172	0	135,529
TOTAL	330,230	8,551	226,154

Many areas are not recommended for wilderness designation in Alternative B, primarily to allow for uses such as wildlife habitat improvement, mechanized and other recreation uses, or timber harvests. Areas judged to be “not capable,” lack naturalness or opportunities for solitude and unconfined primitive recreation. All areas recommended for designation are adjacent to existing wildernesses; no independent areas are recommended.

Alternative H recommends 68 percent of the RA’s analyzed for wilderness designation, plus an additional 33,209 acres outside the roadless area boundaries determined by the Forest Service. The Forest Service had excluded certain areas from the RAs because of evidence of human use (old roads, ditches, timber harvests, etc.). Alternative H includes them to provide for an almost continuous corridor of permanently protected, undisturbed area from north to south through the

Forests, including Rocky Mountain National Park. See the *management area allocation map* for the locations of the recommended areas.

SUMMARY OF MANAGEMENT AREA ALLOCATIONS FOR ALL ROADLESS AREAS

Table 3.119 displays the management area allocations for all analyzed roadless areas for each alternative. Management areas are also shown on the *management area allocation map*.

More specific discussion of management emphasis and direction may be found in Chapters Two (Geographic Area Direction) and Three (Management Area Direction) of the *Forest Plan*.

Table 3.119 Management Area Allocations for All Roadless Areas by Alternative

Management Area Allocations	Alternatives					
	A	B	C	E	H	I
1.2 Wilderness Recom.	0	8,551	0	0	226,154 ^a	0
1.3 Backcountry Rec.	101,817	100,968	52,072	94,742	6,445	0
1.41 Core Habitats	0	2,461	0	0	50,051	0
1.42 Core Restoration	0	0	0	0	7,265	0
1.5 Wild Rivers	76	76	76	6,446	76	76
2.2 Research Nat. Area	154	9,230	154	154	0	0
3.1 Special Interest Area	21,536	44,291	21,536	21,536	0	2,794
3.21 Limited Use	0	0	0	0	7,615	0
3.3 Backcountry Motor	6,955	18,723	16,664	96,345	3,912	83,393
3.5 Flora and Fauna	88,079	83,804	62,587	19,737	500	55,918
3.55 Corridors	0	0	0	0	9,886	0
4.2 Scenery	0	8,354	8,115	8,115	0	8,102
4.3 Disp. Recreation	25,098	19,869	17,982	63,609	5,386	17,890
4.4 Recreation Rivers	10,468	10,468	10,468	10,468	10,468	10,468
5.11 Forest, Int. Range	7,580	8,504	47,489	0	374	86,433
5.13 Forest Products	61,451	266	68,822	0	0	52,774

Management Area Allocations	Alternatives					
	A	B	C	E	H	I
5.5 Dispersed Rec. Forest Products	0	9,128	17,852	2,580	0	1,230
7.1 Intermix	0	14	14	14	859	0
8.21 Dev. Rec. Complex	426	1,141	1,563	1,648	1,208	5,991
8.22 Ski-based resorts	6,624	4,414	4,867	4,867	62	5,193
TOTAL^b	330,264	330,262	330,261	330,261	330,261	330,262

^a Alternative H recommended an additional 33,209 acres for designation that were not located in the analyzed RAs. The total acreage recommended is 259,363.

^b Acres vary due to rounding of numbers.

NEED ASSESSMENT FOR ADDITIONAL WILDERNESS DESIGNATION

FSH 1909.12, the Land and Resource Management Planning Handbook, and Need Assessment Guidelines from the Region 2 Regional Office provide direction for determining the need for areas to be designated as wilderness. This analysis examines the degree to which areas may contribute to the local and national distribution of wilderness. The factors considered include:

1. the locations, sizes and types of other wildernesses in the general vicinity and their distance from the RAs on the Forests
2. wilderness recreation use trends and patterns
3. the need to provide effective habitat for certain biotic species unable to compete with increasing public use and development, including how nonwilderness designations may meet this need
4. the need to provide sanctuary for certain biotic species that have illustrated an inability to survive in less than primitive surroundings
5. an area's ability to provide for preservation of identifiable landforms and ecosystems
6. the extent to which nonwilderness lands on the Forests and other federal, state, and private lands are likely to provide opportunities for unconfined outdoor recreation experiences

Factors 3 through 6 are considered the basis for an analysis of the environmental consequences of the management area allocations. The following six discussions describe the effects of management allocation on the six factors, above.

1. Location, Size and Type of Other Wildernesses in the General Vicinity and their Distance from the Roadless Areas on the Forests

Forty-five designated wildernesses in National Forests, National Parks and Monuments, and BLM lands are within 250 miles of the Denver metropolitan area and the Arapaho and Roosevelt National Forests. These wildernesses are in Colorado, southern Wyoming, northern New Mexico, and Nebraska. Many areas are primarily lodgepole pine, Engelmann spruce and subalpine fir, high-altitude alpine areas. The reader may request a list of these areas.

The Arapaho and Roosevelt National Forests have eight wildernesses of their own, totaling 295,572 acres. The entire National Wilderness System has over 90 million acres in 384 areas.

2. Wilderness Recreation Use and Trends

The Need Assessment also addresses present visitor pressure on other wildernesses, the trends of this use, changing patterns of use, population expansion, trends and changes in transportation, and nationwide travel patterns. Wilderness use close to the Front Range population is increasing slightly, while more remote areas have stable or decreasing use. With a projected population increase of one-half million people on Colorado's Front Range by the year 2010, it is expected that wilderness use will continue to show some moderate increases.

As displayed in the following table, use in Recreation Visitor Days (RVDs) rose to a peak in 1991, then declined through the remainder of the period to 1996. RVDs decreased slightly on wildernesses within a 250 mile radius of the Denver area, but increased for all wildernesses in all National Forests. Annual changes in use were small. Although total time spent in wildernesses stabilized in the 1980s, the number of visits of shorter duration increased. Wilderness entrance trailheads were randomly surveyed on forests other than the Arapaho and Roosevelt in 1988-1992, and showed a slight reduction in use of 1.1 percent per year. Based on these data, and with only slightly increasing use yearly on the Forests and other wildernesses, a need for additional designations on the Forests and Grassland to accommodate RVDs is not indicated. Variations in reported use from year to year may, however, be due to methods of counting, the availability of personnel to gather the data, weather conditions, and season. A uniform and systematic process for determining use is needed. A more detailed discussion of wilderness use is provided in the Wilderness section of this chapter.

3. Effects on Effective Habitat in Roadless Areas from Management Area Allocations

Alternative H provides the most undisturbed area with permanent protection through wilderness designation where biodiversity and natural processes will dominate. Alternative B provides much less, and the other alternatives provide none through additional wilderness designation.

The Need Assessment addresses the ability of certain species to compete with increasing public use and development projects that affect their habitat, and considers means available, other than wilderness designation, for meeting this need.

Wolverines, lynx, ferruginous hawks, goshawks and bighorn sheep are examples of species that do not compete well with human use and development. Habitat effectiveness is favored in the following wilderness recommendation and nonwilderness management areas of the roadless areas, and in the nonwilderness areas shown forestwide. Note that effective habitat is expected to be provided in other management areas that do not specifically emphasize wildlife management, including Special Interest Areas and commodity uses such as timber harvests. The Biological Elements section provides a more detailed discussion of habitat effectiveness.

Table 3.120 Broad Scale Wilderness Use on the Forest and on Areas Near Denver, 1984-1996

Year	Forest Wilderness Use in Thousands of RVDs	Wilderness Use Within a 250-mile Radius of Denver in Millions of RVDs	Total of all National Forest System Wilderness Use in Millions of RVDs
1984	130.8	1.49	10.2
1985	143.8	1.38	12.7
1986	132.0	1.30	12.0
1987	143.7	1.30	13.0
1988	142.4	1.31	11.8
1989	146.4	1.26	11.6
1990	163.0	1.31	12.0
1991	172.3	1.44	12.8
1992	155.4	1.44	13.3
1993	145.0	1.41	12.7
1994	117.0	1.47	13.9
1995	110.7	1.35	13.9
1996	97.8	1.35	14.5

MA 3.1, Special Interest Areas, 3.21 Limited Use, and 3.5 Flora and Fauna emphasize resource managements that may favor habitat effectiveness and are included as a subtotal. However, small areas may have minor development such as roads.

Alternative H has the most acreage favoring maintaining habitat effectiveness by restricting road construction and development, followed by alternatives B, A, C, and I. However, note that habitat effectiveness may be maintained in parcels of most of the management area allocations.

Forestwide, the management areas favoring habitat effectiveness include those listed in Table 3.122.

Table 3.121 Roadless Area Management Areas Favoring Habitat Effectiveness by Alternative, ARNF

Management Area	Alternatives					
	A	B	C	E	H	I
1.2 Wilderness Recom.	0	8,551	0	0	226,154	0
1.3 Backcountry Rec.	101,817	100,968	52,072	94,742	6,445	0
1.41 Core Habitats	0	2,461	0	0	50,051	0
1.42 Core Restore	0	0	0	0	7,265	0
1.5 Wild Rivers	76	76	76	6,446	76	76
2.2 Research Nat. Area	154 ^a	9,229 ^b	154 ^a	154 ^a	0	0
3.55 Corridors	0	0	0	0	988.6	0
Subtotal	102,047	121,285	52,302	101,342	299,877	76
3.1 Special Interest Area	9,894 ^c	32,648 ^d	9,894 ^c	9,894 ^c	0	2,794 ^c
3.21 Limited Use	0	0	0	0	7,615	0
3.5 Flora and Fauna	88,079	83,804	62,587	19,737	500	55,918
Subtotal	97,973	116,452	72,481	29,631	8,115	58,712
TOTAL	200,020	237,737	124,783	130,973	307,992	58,788

^a Acreage is in the Mt. Goliath RNA.

^b Acreage is the North Saint Vrain, Boston Peak Fenn, and North Lone Pine RNAs. Other RNAs are not in RAs.

^c Acreage is in the Bowen Gulch and Niwot Ridge SIAs. Other SIAs are not in RAs.

^d Acreage is the James Peak, Niwot Ridge, Grays Peak - Torreys Peak, Bowen Gulch, Mt. Goliath, and Homestead Meadows SIAs. Other SIAs are not in RAs.

^e Acreage is in the Bowen Gulch and Niwot Ridge SIAs.

Again, Alternatives H, B, and A provide the most effective habitat management, with the other alternatives emphasizing less. The habitat effectiveness resulting from the management area

allocations in Alternative B and on adjacent lands does not indicate a need for additional wilderness designation on the Forests for this factor.

Rocky Mountain National Park (253,000 acres), national forests adjacent to the Arapaho and Roosevelt National Forests (779,800 acres of areas with unconfined recreation opportunities), and the Colorado State Forest (50,000 acres) also provide wildlife habitat.

Table 3.122 Forestwide Management Areas Favoring Habitat Effectiveness by Alternative, ARNF, 1995

Management Area	Alternatives					
	A	B	C	E	H	I
1.1 Wilderness	295,572	295,572	295,572	295,572	295,572	295,572
1.2 Wilderness Recom.	0	8,551	0	0	259,363	0
1.3 Backcountry Recreation	136,376	132,184	58,353	120,773	23,849	0
1.41 Core Habitats	0	9,065	0	0	152,762	0
1.42 Core Restore	0	0	0	0	31,337	0
1.5 Wild Rivers	151	3,272	151	12,025	3,272	151
2.2 Research Natural Area	154	11,285	154	154	0	0
3.1 Special Interest Areas ^a	34,820	63,185	35,299	35,808	0	6,285
3.21 Limited Use	0	0	0	0	114,512	0
3.5 Flora and Fauna	311,734	332,554	171,316	68,373	50,627	171,876
3.55 Corridors	0	0	0	0	57,741	0
TOTAL	778,807	855,668	560,845	532,705	989,035	473,884
PERCENT OF NONWILDERNESS FORESTS	48.6	56.4	26.7	23.9	69.8	17.9
PERCENT OF TOTAL FORESTS	60.0	66.4	43.5	41.3	76.7	36.8

^a The ANRA is not included.

4. Effects on Sanctuaries in Roadless Areas for Species that Have Illustrated an Ability to Survive in less than Primitive Surroundings from Management Area Allocations

The Need Assessment addresses requirements to provide a sanctuary for those species that have demonstrated an inability to survive in less than primitive surroundings or the need for more protection for unique scientific values or other phenomena. Wolverines and ferruginous hawks are examples of such species and tolerate management areas with less than primitive surroundings.

Table 3.123 Plant Series in Roadless Areas and Existing Wilderness, ARNF

Plant Series	All Roadless Areas	IRAs Recommended for Designation		Existing Wilderness on ARNF
		Alternative B	Alternative H	
Aspen-Birch	12,294	42	9,196	2,683
Bistlecone Pine	969	0	711	671
Blue Spruce	81	0	27	Not Determined
Cottonwood-Willow	111	0	54	627
Interior Douglas-fir	15,060	0	9,460	3,856
Limber Pine	1,981	249	1,643	201
Lodgepole Pine	135,579	2,593	86,826	92,573
Interior Ponderosa Pine	27,691	0	13,613	8,028
Rocky Mountain Juniper	117	0	117	Not Determined
Engelmann Spruce (Subalpine)	57,388	4,780	46,058	85,190
Water	610	0	489	673
Marsh	243	8	175	1,069
Forblands	23,447	103	21,558	26,017
Forb-Willow (Alpine)	1,247	0	1,148	2,739
Grasslands	16,153	442	10,811	17,424
Rocks/Snow	11,118	89	9,843	42,286
Shrublands	14,860	0	3,783	4,000
Krummholtz	8,336	210	8,032	6,326

Plant Series	All Roadless Areas	IRAs Recommended for Designation		Existing Wilderness on ARNF
		Alternative B	Alternative H	
Sagebrush	231	0	0	0
Willows	436	39	322	196
Non Vegetated Sites	2,225	0	2,218	801
Other	84	0	66	214
Totals	330,262	8,555	226,151	295,484

5. Effects on Preservation of Identifiable Landforms and Ecosystems in Roadless Areas from Management Area Allocations

The Need Assessment addresses an area's ability to provide for preservation of identifiable landform types and ecosystems. In 1979, "Plant Series Classification for Region 2" was completed, and identified 21 plant series. The Region 2 Need Assessment guidelines for the Forest provides a detailed description of this narrative.

In Region 2, 91 percent of the existing wildernesses (4,911,400 acres) are in the alpine and spruce-fir plant series. On the Arapaho and Roosevelt National Forests, 77.5 percent is in the alpine, spruce-fir, and lodgepole pine ecosystems (229,114 acres of the 295,572 acres of wilderness). Much smaller acreages of Douglas-fir, ponderosa pine and lower elevation species are present in designated wilderness, meaning the plant series in lower elevations are underrepresented.

The areas recommended for wilderness designation would provide the following additional acreages of plant series represented in the Wilderness System.

Spruce-fir and lodgepole pine plant series are recommended for addition to the National Wilderness Preservation System in Alternative B, with more acres of these, ponderosa pine, Douglas-fir and other lower elevation types recommended in H.

Although the Forests could provide additional acreages of underrepresented plant series beyond recommendations in Alternative B, other factors such as suitability for wilderness, manageability, and availability resulted in the recommendations illustrated in Table 3.117. The reasoning for these determinations is explained in detail in the roadless area narratives and summarized in the tables in Appendix C. Note that Alternative B does provide protection of types such as ponderosa pine and Douglas-fir in management areas such as 1.3, 2.2, and 3.1. Individual roadless area tables discuss some of these plant series.

6. Effects on Recreation Opportunities in Roadless Areas from Management Area Allocations

The Need Assessment addresses availability of nonwilderness lands to provide opportunities for unconfined outdoor recreation experiences. Unconfined recreation opportunities are similar to those found in wilderness: opportunities exist for solitude in the absence of human developments and motorized transportation. Opportunities for solitude and unconfined primitive recreation occur in many of the same management area allocations as the habitat effectiveness management discussed in the previous section. The roadless area management area prescriptions and forestwide and adjacent areas that provide these opportunities are shown in the following tables. The Grassland was not considered because motorized use is needed for range management and because of mixed federal and private ownership. Other agency lands adjacent to the Forests are considered in this analysis.

Alternative H provides the most opportunities, Alternatives B, A and E moderate opportunities, and Alternatives C and I provide the least opportunities for unconfined recreation. Conversely, Alternatives E, I, C, and A provide the most opportunities for additional motorized activities, with Alternative B providing less, and Alternative H providing the least.

An analysis of the need for trail-related recreation opportunities (hike/walk and horseback) on the Forests and Grassland reveals that an increase in demand is expected by the year 2005 (see the Recreation section). However, the need for this opportunity to be provided specifically in wilderness has not been substantiated; the need may be sufficiently met in nonwilderness areas.

Table 3.124 Roadless Area Management Areas Favoring Opportunities for Solitude and Unconfined Primitive Recreation by Alternative, ARNF

Management Areas	Alternatives					
	A	B	C	E	H	I
1.2 Wilderness Recom.	0	8,551	0	0	226,154	0
1.3 Backcountry Rec.	101,817	100,968	52,072	94,742	6,445	0
1.41 Core Habitats	0	0	0	0	50,051	0
1.42 Core Restore	0	0	0	0	7,265	0
1.5 Wild Rivers	76	76	76	6,446	76	76
2.2 Research Nat. Areas	154 ^a	9,229 ^b	154 ^a	154 ^a	0	0

Management Areas	Alternatives					
	A	B	C	E	H	I
3.1 Special Interest Areas	9,894 ^c	32,158 ^d	9,894 ^c	9,894 ^c	0	2,794 ^c
3.55 Corridors	0	0	0	0	9,886	0
Total	111,941	150,906	62,196	111,236	299,877	2,870

^a Acreage is in the Mt. Goliath RNA.

^b Acreage is in the North St. Vrain, Boston Peak Fenn, and North Lone Pine RNAs.

^c Acreage is in the Bowen and Niwot Ridge SIAs.

^d Acreage is in the James Peak, Homestead Meadows Niwot Ridge, Mt. Goliath, and Bowen Gulch SIAs.

^e Acreage is in the Bowen Gulch and Niwot Ridge SIAs.

Table 3.125 Broad Scale Opportunities for Solitude and Primitive Unconfined Recreation Opportunities

Location	Alternative (Thousands of Acres)					
	A	B	C	E	H	I
ARNF	407.5	446.5	357.8	406.8	595.4	298.4
Nat'l. Forests Adjacent to ARNF	779.8	779.8	779.8	779.8	779.8	779.8
Rocky Mountain National Park	242.9	242.9	242.9	242.9	242.9	242.9
Colorado State Forest	22.9	22.9	22.9	22.9	22.9	22.9
TOTAL	1,453.1	1,492.1	1,403.4	1,452.4	1,641.0	1,344.0

EFFECTS ON COMMODITY USES IN ROADLESS AREAS FROM THE MANAGEMENT AREA ALLOCATIONS

Management area allocations affect primarily acres suitable for timber harvests and mineral development. The sections on Timber Production and Minerals and Geology provide additional information. The acreages suitable for timber harvest that would be lost annually to wilderness designation in the roadless areas are shown in the following table.

Table 3.126 ASQ Lost Annually in Roadless Areas Recommended for Wilderness

Alternative	Acres of Suitable Timber in Areas Recommended for Wilderness	ASQ Lost/Year MMBF
A	0	0
B	6,435	.353
C	0	0
E	0	0
H	145,323	7.416
I	0	0

For roadless areas analyzed, Alternative H has the most suitable acres and ASQ lost to wilderness recommendations, followed by Alternative B.

Opportunities for mineral development in the roadless areas are shown below. Wilderness and wild river corridors (and other management areas in Alternative H) would be withdrawn from mineral entry and leasing. Research Natural Areas and Special Interest Areas may be withdrawn where needed. The oil and gas leasing decisions in roadless areas in the leasing analysis area are discussed in the Minerals and Geology section.

Alternative H has the most acres withdrawn, 89 percent of the 330,262 acres in RAs. Alternatives A,B,C, and E might withdraw the acres shown in RNAs and Special Interest Areas, but those needs will be determined for each area in a management plan. Alternative B could withdraw 19 percent, but it will probably be less. Alternative I would withdraw the least, 0.9 percent of the RAs analyzed.

Livestock grazing is authorized in wilderness and roadless areas, and would be minimally affected by the proposed allocations or designations.

Table 3.127 Acres Not Available and Acres Available for Mineral Development in Roadless Areas by Alternative

Alt.	Not Available - Recommended for Wilderness	Not Available in Other Management Areas	Total Not Available for Mineral Development	Total Available for Mineral Development
A	0	21,766 ^a	21,766	308,496
B	8,551	53,597 ^a	62,148	268,114
C	0	21,766 ^a	21,766	308,496
E	0	28,136 ^a	28,136	302,126
H	226,154	62,278 ^b	293,432	36,830
I	0	2,870 ^a	2,870	327,392

^a Management Areas 1.5 (Wild Rivers), 3.1 (SIAs), and 2.2 (RNAs) (See *Forest Plan*, Chapter Three)

^b Management Areas 1.41 (Existing Core Habitats), 1.42 (Core Habitats - Restoration), 1.5 (Wild Rivers), and 3.55 (Corridors Connecting Core Areas) (See *Forest Plan*, Chapter Three.)

SUMMARY OF NEED ASSESSMENT ANALYSIS

Analysis of the acres of wilderness in the vicinity of the Forests, present visitor use of wilderness, the availability of nonwilderness lands for an unconfined outdoor recreation experience, other nonwilderness managements that provide habitat effectiveness, and the need for sanctuaries as habitat for some wildlife do not reveal the need for additional designation of wilderness.

Table 3.128 provides a comparison of the management emphasis and environmental consequences on a broad scale of the alternative management area allocations.

The multiple use acres allow activities such as oil and gas leasing, vegetation management such as timber harvest, developed recreation facilities, motorized recreation opportunities for primitive recreation and acreages to secure effective habitat.

Constructed and primitive roads, campgrounds, trails, off road vehicle routes, timber harvests, additional ski area development, special uses such as power distribution lines and pipelines may be found, and may impact opportunities for primitive recreation and effective habitat for some species of wildlife and vegetation.

Recommended wilderness and other management allocations provide effective habitat for wildlife, but some impacts from trail users may occur. Generally, human activities will be limited to trail corridors and areas around lakes. Other relatively short term activities such as wildlife habitat improvement through prescribed fire may also occur. However, the general emphasis will be minimal human impact on wildlife, vegetation, and natural processes.

Table 3.128 Summary of Roadless Area Management Allocations and Management Emphasis by Alternative

Alternative	Acres Recommended for Wilderness	Acres Providing Opportunities for Primitive Unconced Recreation	Acres Favoring Effective Habitat	Acres Providing Multiple Use Management ^a
A	0	111,941	200,020	130,245
B	8,551	150,906	237,737	95,524
C	0	62,196	124,783	205,447
E	0	111,236	130,973	199,257
H	226,154	299,877	307,992	22,238
I	0	2,870	58,788	271,442

^a Management Areas 3.1 (ANRA), 3.3, 4.2, 4.3, 4.4, 5.11, 5.13, 5.5, 7.1, 8.21, 8.22

Although additional acreages of Douglas-fir, ponderosa pine, and other lower altitude vegetation could be recommended, Alternative B results in little permanent protection for these ecosystems. However, some management areas do protect these environments (1.3, 2.2, 1.41, 3.1, 1.5).

Alternative H provides permanent protection for more acres of effective wildlife habitat, primitive recreation opportunities, and underrepresented ecosystems, but allows few commodity uses.

Alternatives A, C, E, and I provide opportunities for commodity uses and some primitive recreation and effective habitat.

CUMULATIVE EFFECTS

Refer to the Biological Elements of the Environment section of this chapter for cumulative effects related to biodiversity. Other sections discuss the effects of the management area allocations Forestwide. The effects of the allocations on recreation opportunities are included in the Need Assessment discussions above.